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## GENERAL STUDIES COMMENT SHEET 2211

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| **Name of Candidate** | Mahima Kasana | | |
| **Medium Eng./Hindi** | English | **Registration Number** | 1383501 |
| **Center** | | **Date** | |

### INDEX TABLE

| Q. No. | Maximum Marks | Marks Obtained |
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**Total Marks Obtained:**

**Remarks:**

### INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

# EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

**Overall Macro Comments / feedback / suggestions on Answer Booklet:**

**1.**

**2.**

**3.**

**4.**

**5.**

**6.**

**All the Best**

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Q1. The Cholas are inextricably linked with the Zenith of Dravidian art & Architecture. Comment. (10)

The Chola period (10th century) was a period of development of Dravidian art which reached its zenith.

Dravidian art & architecture like:

① Temple art:

1.1. Rajarajeshwara temple by Rajaraja Chola is a masterpiece in temple art

1.2. Temples developed here included features different from Nagara style like:
→ Huge boundary walls
→ Tank near temple
→ Pyramidal slope unlike curvilinear in Nagara

② City development: Rulers like ~~Cho~~ Rajaraja chola established new cities like Gangaikondachola-puram

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(3) Mural paintings on temple walls

(a)

Thus Chola rulers expanded the cultural development started by Pallavas (by cave temples) & expanded it beyond India to South east as well.

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Q2. Among the major legacies of the Indian freedom movement, civil liberties found an important one. Analyse.

The Indian freedom struggle was based on political, social & economic freedom ideals.

Civil liberties formed an important aspect as evident from:

① Civil uprisings:

1.1. Fakir rebellion (1760s) as a movement of freedom to people against taxes.

1.2. Tribal movements against tax & rent like Ho & Munda uprisings.

② The Social reformers themselves called for freedom to people like Rammohan roy's anti-Sati campaign & Ishwarchandra Vidya-Sagar's emphasis on female education

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(3) The Indian National Congress, when it came in the provinces (1937), focused on civil liberties as follows.

3.1. Free education to lower castes
3.2. Removal of restriction on press.
3.3. Release of political prisoners.

Thus, Indian freedom struggle focussed on freedoms other than economic & political.

These freedoms are now enshrined in our constitution.

For example: Article 21 includes freedom of Life which includes Right to privacy, health, good environment & other civil rights.

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Q3. The Berlin Conference of 1884-85 in many ways set the ground for the scramble in Africa. Elucidate.

The Berlin Conference of 1884-85 was held as the European powers also wanted to colonize Africa after Italian King Leopold began his colonization of central Africa.

In this conference ~~nati~~ the French, English, Germans and Others

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Q4. What is cloudburst? what are its effects? why are they more frequent in himalayan region?

Cloudbursts are sudden burst of water that floods an entire region in very less time.

This happens when a cloud becomes overly saturated with water & bursts suddenly releasing water suddenly & immediately.

EFFECTS

① Economic

1.1. Loss to property:

Eg: Cloudbursts in KedarNath

1.2. Loss to infrastructure like dams, buildings & hospitals

② Social

2.1. Loss to life

2.2. It becomes difficult to

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navigate and help survivors after the disaster.

2.3. Fear of disease spread. Eg: Mosquito borne diseases due to stagnating water.

2.4. Post disaster rehabilitation also becomes tough ~~as~~

Frequency of cloudbursts is more in Himalayas due to huge source of water from rivers, # which supplies water to clouds through evaporation.

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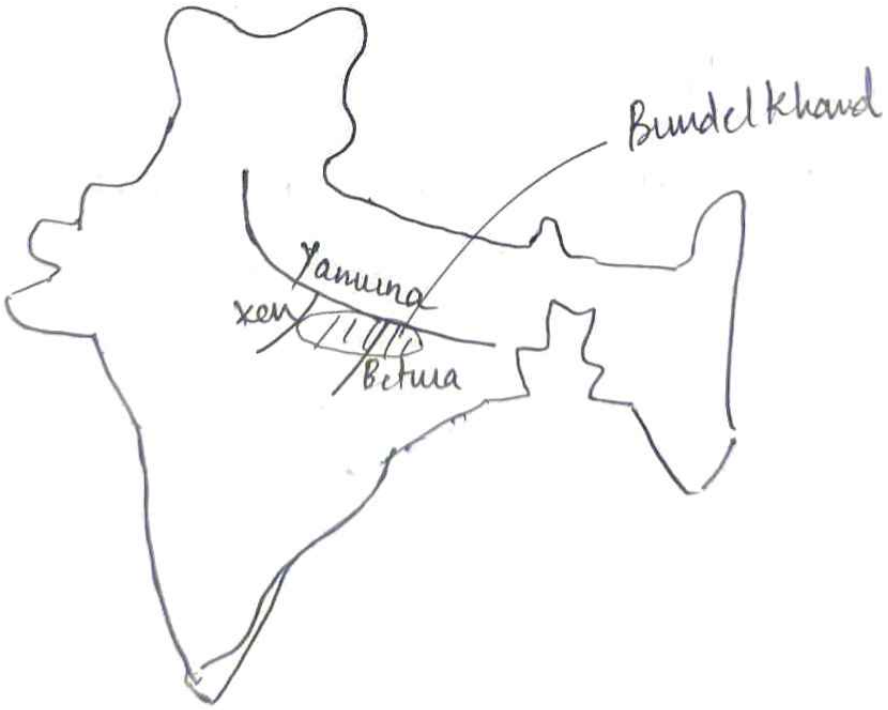
Q5. Despite its potential, there are several challenges in the implementation of Ken-Betwa Project.

Indian Government released a National Perspective Plan with an aim to link rivers in two segments. The Himalayan & Peninsular

One of these river link plan is the Ken-Betwa plan.




Advantages

① Supply water to drought hit Bundelkhand.

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(2) Transfer water from surplus Ken to deficit Betwa

(3) Provide irrigation to the Bundelkhand agriculture

Concerns

(1) Panna Tiger Reserve lies in the vicinity of Ken river. This reserve will be submerged affecting lives of Biodiversity.

(2) Concern of rehabilitation of tribal people

(3) Immense costs.

(4) These challenges make it difficult to implement this project.

The pros & cons must be balanced to make a right decision.

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Q 6. Identify the issues related to production & supply of coal in India. How can these issues be addressed?

India still depends on more than 50% of its energy needs from Coal Power plants.

Thus, production & supply of coal needs to be smooth to ensure that energy needs are not compromised.

ISSUES

① Poor quality Indian Coal:
1.1. Non coking
1.2. Bituminous, which reduces its efficient usage

② Poor infrastructure to produce coal at cheap rates.

③ Shift to climate debate will make coal more difficult to be used as it has high pollution impacts.

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(4) Poor transportation make timely supply difficult.

Need of the Hour

(1) A shift to renewables is inevitable to avoid climate impact of such polluting industries

(2) New technologies can be used to extract Coal Bed Methane & Shale gas resources which go waste during mining

A careful plan must be made taking in mind our Net Zero goal of 2070

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Q7. Present the geographical distribution of agro-based industries in India & discuss the challenges faced by them.

In India, around 42% of the population is dependent on agriculture, making this sector an important source of income.

The agro-based industries are a way to create value added products from Indian agriculture

Advantages
- Provide income to farmers by value addition
- Higher shelf life of food
- Better nutrition Eg: Food fortification

Agro based industries are spread throughout India but majorly lie in the Northern belt due to:

(1) Better agricultural production

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(2) Better infrastructure for transportation of produce in states like Haryana & Punjab

(3) Better credit facilities relative to East, South or West India

Challenges

(1) Credit facilities, even in North-Western India, are not upto the mark. Thus small units depend on INFORMAL LENDING.

(2) Poor marketing & Advertising

(3) Less focus on quality

(4) Poor value addition: Even though India produces world's second largest horticulture products, less than 2% of it is processed.

(5) Thus, agro based industries lag behind in growth. It is essential to focus on value addition & marketing to ensure sustained demand at home & abroad.

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Q8. The caste system continues to be one of the key drivers of poverty & inequality in India. Discuss.

B.R Ambedkar referred to caste as "not a division of labour, rather a division among labourers".

Thus, caste system creates division within people as follows:

① An overwhelming proportion of poor in India, (among 30% poor according to Rangarajan report) are from lower castes. This is due to:

1.1. Historical subjugation as ~~poor~~ low castes did not own land during land systems like Zamindari.

1.2. Even today, education has become a dominant sphere of elite.

Eg: Maximum students who leave IIT mid-year are from SC, ST & OBC

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1.3. High cost of health: (60% out of pocket expenditure) pushes people into poverty of which lower caste are predominant

(2) Inequality in India has also risen: According to Thomas Piketty, top 1% of India's population owns 22% of income. This inequality also has a caste link:

2.1. As the upper castes became rich in their first generations, caste's effect on occupation persisted for lower caste.
Eg: Manual scavenging today is still done by a particular caste

Thus, caste system persists today & manifests itself in modern forms like access to education, land, jobs, etc.

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Q9. Discuss the issues faced by domestic workers in India. Also suggest measures that can be taken to empower them.

90% of the workers in India are informal. Amongst them, domestic workers also find a place.

ISSUES

① No social security: Unlike formal sector like pensions, paid leaves, etc

② Domestic work is dominated by women due to patriarchal set up. They are not recognised as workers and women end up doing both household work & jobs → Compulsory Workers

③ For women who work as domestic help: There are no permanent contracts → Risk of job loss

④ Even government schemes do not focus on domestic workers.

⑤ Trade unions still demand formalisation of their jobs but to no avail.

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Measures

(1) Bringing domestic work within the ambit of formal sector will help them avail social security.

(2) Covering them under basic income schemes to ensure sustenance even during job loss.

(3) Women empowerment campaigns through advertising can be a start ~~in~~ towards separating women from their gendered role of home maker.

Eg: Success of Beti Bachao — Beti Padhao is an inspiration

For B.R Ambedkar, a success of a nation is judged by the progress it's women have made

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Q10. Given the deeply gendered impact of population control measures, examine the need to rethink the current approach of population control measures in India.

According to NFHS 5 report (2020-21), contraception in India is heavily skewed towards females despite the fact that male sterilization is safer & cheaper.

This brings to light the gendered impact of population control.

Need to Rethink

① World Population Prospects report, 2020 states that India will overtake China in terms of population by 2023.

② Thus, population control needs to be reimagined as an effort from both men & women of a family.

③ Male sterilization is only 0.3%. There is scope to improve this rate.

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(4) While on one hand, women are made to face contraception, Abortion in India is still not a matter of choice. This denies women of their reproductive choices.

(5) Childbirth impacts women's education & jobs, both of which are constrained due to household & child caring work.

There is a need to shift focus to

(1) Providing child care services to women in jobs.

(2) Focus on male contraception

(3) Educating families ~~of pop~~ in this context.

This growing population also includes girl child who need to be rescued from evils like foeticide, infanticide & child marriage.

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Q11. Examine the impact of Shramana tradition on Vedic religion & its relation with emergence of Jainism, Buddhism & Ajivika sects.

Shramana tradition was the response to Brahmanic dominance during later Vedic period.

They rose due to strict religious code of Vedic period.

Features

1. Based on monk & shramana culture where one wanders till enlightenment is achieved.
2. No strict rules based on Varna system. So leaders could easily follow Shramana tradition
3. No discrimination based on social & economic status.
4. Even women were allowed to follow practices.

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Such shramana traditions ~~the~~ diverged into Buddhism, Jainism & Ajivikas.

- Buddhism ~~also~~ came as a response to Brahmanic dominance & strict rules.

- Jain tradition of nature worship was derived from shramana system.

- Ajivikas grew during the period of Bindusara of Magadh ~~during who's reign~~ who was a follower of Ajivika.

  Here also, ~~monk~~ wanderer & social equality were emphasised.

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Thus these religions came up during the time when society started dividing based on Varna system and became rigid.

Q12. Shed light on use of symbols & symbolic language by Gandhi fel both integrating masses into national moment & against social evils. Symbolism is one important weapon to display one's thoughts openly. This was used by Gandhiji in S. Africa & in India to portray his displeasure towards British state.

SYMBOLISM USED

(1) The Charkha used by Gandhiji did not only signify economic freedom to wear handspun clothes against British made textiles, but also ~~was~~ became a symbol of freedom movement as people discarded british clothes and went ~~on~~ Swadeshi.

(2) Burning of registration certificates in South Africa was an act to

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· not just discard the certificates but also potray Civil Disobedience

(3) 'Salt as a symbol of the Dandi March was used to unite people from all economic backgrounds since taxation on salt affected everyone.

(4) Gandhiji, himself, gave up the English attire & resorted to a handspun dhoti. This was to potray his Indianess & to connect to the poor masses who barely had clothes on.

(5) His non violence, itself, was a symbol of Indian courage & endurance of by facing British lathis without fear & retaliation

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IMPACT OF SYMBOLISM

① Gandhiji's symbols were adopted by others like Dr B.R Ambedkar who ~~burnt~~ took water from the well to protest untouchability as an evil.

② Gandhian symbols united the masses which was not present before.

③ Peasants, Traders, Youth & Women came together by burning british cloth to showcase displeasure

Thus, Gandhian symbols made it easy for masses to connect to the National movement.

Q13. Giving a brief overview of the three Carnatic wars, discuss the factors that led to the success of British against French in the struggle for control over India.

Carnatic wars began as a local enmity derived from large Anglo-French enmity in the world sphere.

First Carnatic war (1746)

began as a response to the Austrian war of Independence. British in India irked the French which retaliated leading to war.

Second Carnatic war (1749) was a result of local enmities between rulers of Hyderabad & Arcot. French supported Chanda Sahib & grandson of Nizam of Hyderabad. British opposed them resulting in a war ending in Treaty of Peace of Paris.

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Third Carnatic War resulted due to British aspirations to rule south India. Robert Clive hatched a plan to defeat Chanda Sahib resulting in fall of French at Battle of Wandiwash (1759)

Factors for British success

1. Better army with leaders like Robert Clive. French Dupleix was called back after second Carnatic War
2. British always had finances as they never ~~for~~ shifted focus from trade. French did not use British like debt market, thus fell low in finances

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(3) British East India company was a private company, thus detached from state. French company was a state venture leading to slow decisions.

(4) Industrial Revolution in Britain gave them advantage in latest technology & finances.

(5) English had many bases like Bengal, Surat, Bombay while French had just one in Pondicherry.

Thus British emerged as winners & French ended up having minimal existence in India thereafter.

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Q14. Provide an account of the issues that led to a crisis in Punjab in 1980s. Also, discuss the roadmap to peace that was eventually adopted.

Punjab, in 1980s, was facing extremist movements leading to a crisis in mid 1980s.

Reason

1. Proximity to Pakistan which supplied arms, drugs & funds and also incited hate.
2. Operation Blue Star to oust separatist demanding Khalistan irked a section of extremists.
3. The result of this operation was assasination of the Prime Minister Indira Gandhi in 1984.

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(4) Economic factors like poverty, unemployment also played a role in creating disturbance in the state.

Roadmap to Peace

(1) After attacks on Sikhs due to assassination of the PM, it was realized that violence needs to be immediately stopped as innocent lives were being lost.

(2) The Government set up a Committee to look into the matter to curb violence in Punjab & rest of India.

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Q15. Give a brief account of the distribution of installed capacity of solar power in India. Highlighting the challenges in proper utilisation of solar energy, mention steps taken by govt. to promote. India aims to generate 500 GW from renewable energy by 2030 according to our 'Panchamrit' goals.

Solar Power becomes an important way to reach that goal due to:

① India lying within tropics thus recieving maximum insolation.

② ~~Indian states~~ Reducing cost of solar makers

INSTALLED CAPACITY

① Tamil Nadu possesses a huge potential in solar power. Thus, solar power ~~capacity~~ generation here is maximum.

(2) Floating solar plants in Gujarat provide new ways to utilize solar energy.

(3) Rajasthan's immense potential in utilizing solar energy needs to be exploited.

---

Challenges

(1) Poor efficiency: Solar energy is still 20-22% efficient only.

(2) Huge initial investments prevents uptake by households.

(3) Challenge of distribution & saving energy still persist.

(4) Solar plants take up huge lands affecting biodiversity of the region
Eg: Camels get hurt due to edges of solar plants

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(5) Maintenance costs are high not affordable by poor

(6) Pollution by solar wafers once their life ends might be a future problem as their is no technology to dispose these.

Government efforts

(1) PM-KUSUM scheme to help farmers adopt solar technology

(2) International Solar Alliance by India & France aim to take solar grid to international level.

(3) Renewable energy under Priority Sector Lending

Thus, solar energy is a safer & sustainable way to achieve Net Zero by 2070.

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Q16. Post-drift theories based on ocean floor mapping provided new dimensions to the study of distribution of oceans & continents. Elaborate.

Initial studies on continents were refuted by scientists like Harry Hess after that data of ocean floor mapping was available.

The theory stated that the crust is moving on the body of hot magma beneath. The continents are a result of such movements ~~avg~~ and PANGAEA & PANTHALASSA were a result of this plate movement

Reasons given for plate tectonics

(1) It was expected that ocean floor would be older than

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continent, but carbon dating proved it to be younger.

(2) Ocean floor was not flat, rather had crest, troughs & ridges

(3) land on both sides of the ridges were of equal age showing spreading of land both ways.

(4) Polarity of land also confirmed plate movement.

(5) It was seen that land was being consumed ~~on~~ at plate edges which pointed to a circular movement of land.

These results made it clear that plate movements created continents & oceans. These plates moved

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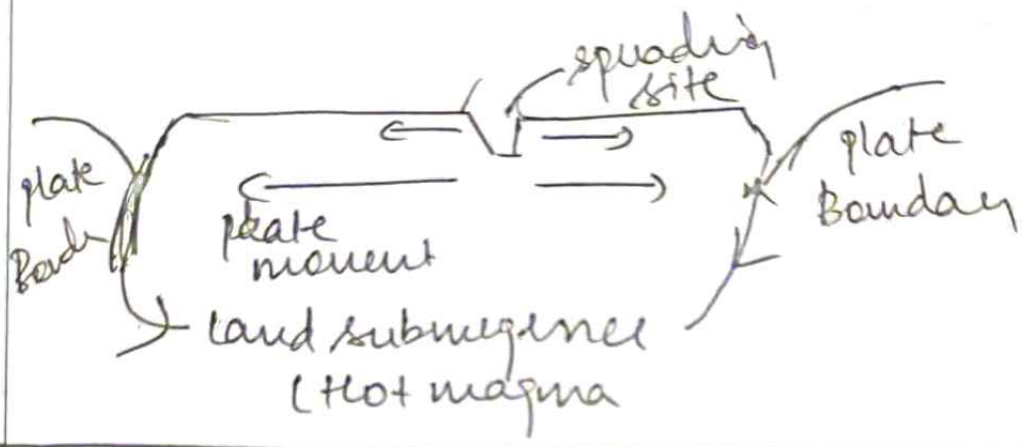
and got submerged at the plate boundaries.

Plate movement



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Q17. Explain the phenomenon of heat waves. Also, enumerate the conditions favourable for the development of heat waves in India & their associated health impacts.

Recent heat waves in Europe which have killed hundreds has brought to fore the issue of climate related heatwaves.

Heatwaves take place when heat of land gets trapped due to barriers like clouds, ~~pollu~~ water vapour. This trapped heat is not allowed to leave at night worsening temperatures.

In India heat waves can develop due to following:

① ~~Poor~~ Lack of forests reduces humidity worsening temperatures

② Water stress in India worsens

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heat effect on poor

(3) Climate change due to global warming will adversely impact India which lies in the tropics.

Health Impacts

(1) Loss to life : Evident from deaths in Europe.

(2) Forest fires due to heat create pollution.
Eg: California wildfires

(3) Human body can only bear Wet Bulb temperature of 35°C. Beyond this, fatalities will rise.

(4) Adversely impact poor who donot have health service access at cheap reach

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(5) Dehydration & reduced work efficiency.

Thus, heatwaves are a problem that need to be tackled before they become pervasive impacting lives unequally.

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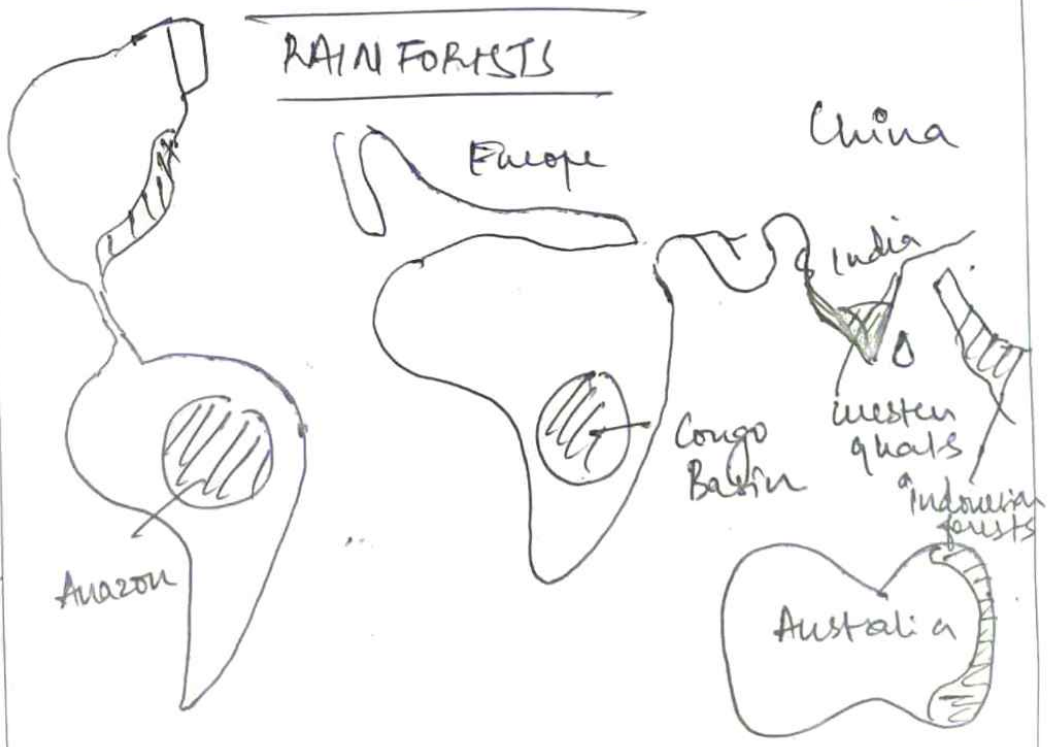
Q18. Providing an account of distribution of rainforests across the world, mention their key characteristics. Also, highlight the threats faced by tropical rainforest.

Rainforests are evergreen forests that donot shed their leaves together and remain green throughout the year.

Eg: Amazon Rainforests.

They are prevalent in the tropics and near continent-ocean margin where ~~that~~ warm currents flow.



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Characteristics
- Green throughout the year
- Rainfall prevalent throughout the year
- Maximum Biodiversity

Threats

① Land desertification:
Eg: spread of Sahara desert beyond to the Congo forests

② Anthropogenic : Forest Clearance for wood. Eg: Amazon forests being cleared at a fast pace

③ Climate change : Impact climate of the area changing biodiversity.
Eg: Arctic Albatross seen for the first time in Tamil Nadu

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(4) Invasive species threat

Thus rainforests face natural & anthropogenic stress which are a death blow to the species that thrive on these forests.

Sustainable goals for 2030 cannot be met unless their degradation is stopped.

Q19. Indian cities are not only mimicking the social & cultural structures of inequality & exclusion found in rural areas but are also creating fault lines for future conflicts. Discuss.

It is expected that urban population in India will reach 60 crores by 2030

These cities have started adopting inequality & exclusionary practices seen in rural areas as seen from:

(1) Slum development: Around 17% of urban population in India lives in slums → exclusion

(2) Poor health care in cities due to huge costs ⇒ poverty

Out of pocket expenditure as high as 60% of total health expenditure

(3) Spread of diseases:

Eg: Water collection in slums makes them vulnerable to mosquito borne diseases

(4) Rural India has employment guarantee under MGNREGA, while urban poor are not covered under it.

(5) Low investment in infrastructure. Recommended $100 per capita, but India spends only $17 per capita.

(6) Alongside, urban areas create fault lines as seen from rise in regionalism. Slums are seen as unauthorized and land grabbing.
Any action against these vulnerable beings them do streets making them homeless.

The need of the hour is to look at urbanization as a social & economic change. Focus

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should be on :

① Making sustainable cities that can withstand disaster.
Eg: Sponge cities in China

② Affordable Housing using technology.
Eg: Lighthouse project

③ Greater investment on health (currently less than 2% of GDP)

④

This will ensure that urban areas donot worsen the unequal status of poor who run from inequality ~~by~~ & poverty by migrating to large cities.

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Q20. Examine the multi-dimensional impact of globalisation on tribal development in India.

Globalisation is the process of interdependence, integration & interconnectedness of economies & societies.

Globalisation made a dominant presence in India post 1990s.

Their impact on tribal households have been:

(1) Economic:

1.1. Global trade has made tribal goods vanish from the markets.

Eg: Channapatna toys facing competition from chinese toys.

(2) Social:

2.1. Loss of land due to industrial pressure

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2.2. Spread of homogenization
Eg: According to UN, every two weeks one language is lost.

2.3. But alongside globalisation also brought forward the idea of decentralization. Eg: 73rd Amendment.

2.4. Glocalisation: has helped amalgamate global culture with local cultures.

2.5. Tribal voices have also spread through internet

Thus globalisation has had a mixed impact on Indian tribals. The focus should be to prevent homogenizing impact of

globalisation & protect tribal culture & language.

The swearing in of a tribal woman as the President of India provides hope to tribals who now have representation at the top level of government.

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## GENERAL STUDIES COMMENT SHEET 2213

| | | | |
|---|---|---|---|
| **Name of Candidate** | Mahima Kasana | | |
| **Medium Eng./Hindi** | English | **Registration Number** | 1383501 |
| **Center** | | **Date** | |

### INDEX TABLE

| Q. No. | Maximum Marks | Marks Obtained |
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**Total Marks Obtained:**

**Remarks:**

### INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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# EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

**Overall Macro Comments / feedback / suggestions on Answer Booklet:**

**1.**

**2.**

**3.**

**4.**

**5.**

**6.**

**All the Best**

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Q1. An effective approach to green budgeting is underpinned by strong strategic framework, tools for evidence generation and enabling budgetary governance framework. Discuss.

Green Budgeting is a new measure to incorporate climate & environment impacts on GDP & provide budget accordingly.

Need:

① Strong strategic framework

↳ Create effective strategy to invest in environment services

② Tools for evidence

↳ Impact assessment of climate on economy

↳ Eg: wildfires → reduced forest resources.

③ Budgetary governance

↳ Investment in environment protection

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Challenges — difficult to calculate impact of climate
— Industry → against it
— other financial constraints
↳ To invest in social schemes.

Thus, Green budgeting is the need of the hour, but

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Q2. State the need for circular economy in India and the challenges associated with it. Also, discuss the measures that are required to build a circular economy in India.

Circular economy is the economic growth based on domestic market to reduce dependence from outside.

Need for circular economy

1. To ensure domestic businesses grow and are not cornered by MNCs.
2. Sustained growth can be ensured only from sustained demand.
   - ↳ Rising fear of Protectionism worldwide → reduce demand
   - ↳ Disruption in world demand due to wars & climate change
3. Disruption in supply
   - ↳ Chinese stopping of API's to India during covid

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↳ Breakage in supply chain → poor resilience.

(B) (M)

Challenges

- World dependence → globalisation
- Huge competition from MNCs → low costs
- WTO Barrier to domestic policy

## Need

1. Incentivising Indian industry to cater to Indian demands like China → to drive growth
2. Need to produce goods demanded at home → better sustained
3. Then export rest of it.

This will ensure that world shocks do not impact Indian economy adversely

Eg: Recent War → Inflation

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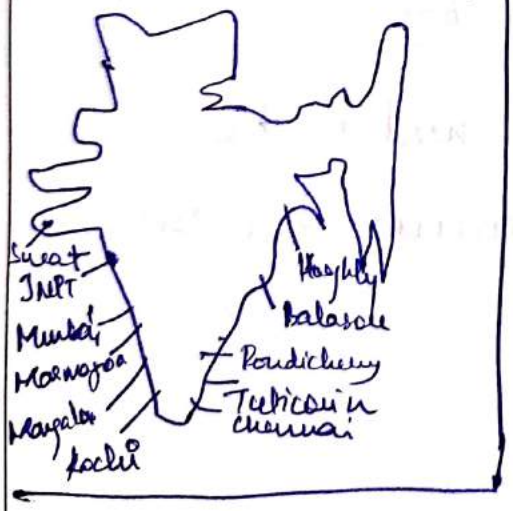
Q3. The Major Port Authorities Act, 2021 seeks to grant greater autonomy and flexibility to the major ports and professionalise their governance. Discuss.

Ports in India face challenges of

- poor autonomy from state politics
- bureaucratic control
- slow clearance & delays increasing transport costs
- unprofessional management

~~Port~~ Major ports: Provide easy transport to Indian goods.

- lie on major route ~~from~~ Indian Ocean
- potential to become entrepots



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Major Port Authorities Act, 2021 aims to reduce such governance blocks by

- providing for port authority independence from the bureaucratic control
- PPP in port management
- Encourage investment in ports as international ports similar to Singapore
- Reduce transport costs

Challenges —
- Federalism : States see this as a reduction of their powers
- PPP ~~may~~ are not always efficient
- Monopolise port handling

Thus, all stakeholders need to be brought in this endeavour for ensuring port development.

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Q4. Analyse the need for shifting from presumptive land titling to conclusive land titling system in India. Also, highlighting the hurdles in its implementation

The land system in India is such that there are no conclusive land titles leading to:

- Land grabbing
- Land related disputes
- ineffective policy due to unclear land status.

Need to shift to conclusive land titles

1. To avoid legal battles on land
2. Proper implementation of land Acquisition for development purposes
3. Ascertain beneficiaries of schemes like DBT on fertilizers, power etc
4. Provide ID to land → better monitoring of land use.
5. To digitize land records

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hurdles in implementation

① Legal disputes : land ownership is unclear

② Resistance from farmers : whose land is at risk due to poor bargaining power → rich can bribe officials to include land within their areas. → BIASEDNESS

③ large number of small farmers
↳ fragmented land holding
(86-2% farmers → small
(Agri Census data))
↳ difficult & costly to ascertain ownership

Thus, this effort will require political will & cooperation from the landed class to make it unbiased & fair.

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Q5. What do you understand by methanol economy? Critically discuss its role in achieving India's energy security and economic prosperity.

Methanol economy is usage of methane & ethanol as alternative fuels to reduce greenhouse gas emissions.

Advantages

- Methane & ethanol → burn completely → no release of $CO_2$
- Increase fuel efficiency
- Reduce import bill → Petroleum → 85% imported
- Cheaper transition to clean economy → unlike expensive hydrogen fuel
- Helpful in achieving Net Zero by 2070

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Challenges :

- Ethanol : produced from sugarcane which is water intensive crop.
- Indian automobiles : not yet adopted to using hybrid fuels → greater investment is needed here.
- Other alternatives → electric vehicle → more promising due to less investment needed.

The need here is to move to a diverse energy set up so that dependence on one fuel does not make it a risky proposition.

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Q6. Discuss the role of geospatial technologies in developing effective approaches for disaster risk reduction and disaster management.

Geo-spatial technologies are used map and study landforms.

Role in disaster management :

① Ascertain disaster prone areas

1.1. High risk landforms to landslide by studying mountains

1.2. Glacial lakes outburst can be forewarned if source of water can be ascertained.

Eg: Nanda devi floods → source could not be ascertained.

② Using data to avoid urbanisation in risky areas

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(3) Used to ascertain forested areas → to avoid human-animal conflict.

(4) Forewarning → floods during rains can be warned

Challenges
- Poor investment in research (0.7% of GDP only)
- Financial constraints → expensive technologies
- Focus is still not towards climate change

Thus, geospatial technologies can help make cities sustainable (SDG11)

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Q7. The focus of Environment Impact Assessment (EIA) needs to shift from utilization and exploitation of natural resources to conservation of natural resources. Discuss.

Environment Impact Assessment (EIA) is a method to ascertain the possible impact of a development project on environment.

Focus needs to shift :

① Utilization & exploitation currently

1.1. EIA is funded by the developing company itself → NON BIASED

1.2. Not compulsory in government projects
↳ Unfair.

1.3. Poor quality reports

1.4. Cases of false information in reports & intentional use of difficult language

1.5. Public disclosure → not transparent

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(2) Conservation of natural resources is needed :

2.1. strengthening EIA by using unbiased means.

2.2. Not to be funded by industry

2.3. Compulsory Gram Panchayat involvement.

2.4. Using ~~pro~~ experts to ascertain impact → focus on quality of report.

In order to ensure that economic growth is sustainable, it is essential to follow rules on environment protection

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Q8. What do you understand by hybrid warfare? Discuss India's preparedness in this context.

Hybrid warfare includes conventional & non conventional measures of warfare.

- Conventional
  - Land attacks
  - Air attack
  - Water attack
- Non conventional
  - Cyber warfare
    Eg: Mumbai power outage → chinese hands
  - Bio warfare: using microbes to spread disease in enemy state
  - Fake news: spreading communal sentiments in other nation
    Eg: Pakistan flaring Hindu-Muslim divide
  - Data theft
    Eg: Chinese spying using data theft

Such non conventional measures make it difficult to ascertain source and combat it effectively.

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India's efforts

1. National cyber security policy, 2013
2. IT Act, 2000 : Blocking Chinese websites & media.
3. NATGRID : operational now
   - ↳ connects 11 agencies (like RAW, IB & others)
   - ↳ spread of information
4. NCIIPC : Critical information protection
5. New social media guidelines
   - ↳ combat misinformation
6. Signatory to convention on Chemical weapons & Bio weapons

India needs to invest in research to be ready for new challenges in warfare.

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Q9. Discuss the challenges associated with inclusion of women in armed forces, particularly in combat roles in India. How can these challenges be addressed.

The supreme court recently ruled that Women cannot be excluded from Permanent commission in armed forces due to reasons of gendered norms.

Challenges with inclusion

(1) Armed services are dominated with men. As one army chief pointed out, men will have difficulty taking orders from women.

This Patriarchal system is a major barrier to women's equality.

(2) Thinking that women are unfit for combatant roles → colonial & patriarchal

Eg: Israel has women in their army.

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(3) Women themselves have not considered this avenue for jobs → gendered roles assigned.

(4) War crimes → women will face the brunt

Need of the hour

(1) Training to armed forces on gender sensitivity

(2) International experience:
Using Israel's help in combating stereotypes

(3) Training to women for combatant roles.

Thus, an equal status in all spheres is essential to do away with stereotypes.

SDG5: Gender equality can be met only when this happens

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Q10. S. Chandrasekhar was one of the greatest scientists of the 20th century whose prolific contributions spanned across astrophysics, space and mathematics. Elaborate.

S. Chandrasekhar contributed to science during 20th century.

Contributions

① Chandrasekhar limit : This limit defined whether a dying star would become a blackhole or red giant.

②

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Q11. State finances in India present a mixed picture, with debt sustainability being a major concern. Discuss in context of the recent RBI report on state finances.

Recent RBI report on state finances highlighted poor fiscal situation of states with high debt as seen from:

1. High discom debt → not accounted in state debt but to be borne by states.
2. Freebie culture → Political tools to win votes. → Power subsidy
3. Poor resource generation potential unlike Centre which can print notes.
4. States crossing FRBM limit of 3.5% Fiscal deficit to GDP

Issues created by such debt

1. Strain on state resources

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(2) Poor spending on social welfare if states are highly indebted

(3) FRBM limit breach
↳ FDI potential of states is worsened → as FDI investors assess fiscal deficit levels

(4) Sri Lankan failure → due to fiscal problems
↳ India needs to ensure election freebies are not misutilized.

(5) UDAY failure → DISCOMs failing

But, alongside

(1) Fiscal deficit is not a problem if it is invested in capital assets

(2) 3.5% limit is not based on any study

(3) Investment in social sector is essential
↳ India is a welfare state
↳ need to differentiate between ~~elec~~ freebies & social schemes

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It is essential to ensure that state finances are not misutilized by

- Fiscal prudence on part of states
- Avoid political freebies
- Investing in capital assets instead of subsidies
- Focus on effective resource management

It is important to follow certain budgetary norms to avoid a Sri Lanka type failure

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Q12. The Indian experience provides several lessons of an inclusive digital economy model that enables formal digital governance structure at a low cost and with easier access. Discuss.

India has one of the world's lowest internet costs making it easily available to poor users as seen from:

① More than 750 million internet users and counting.

② Almost 99% of internet users use it on mobile.

---

INCLUSIVE DIGITAL ECONOMY

---

① Bharat net programme

1.1. spreading optical fibre to Gram panchayats nationwide.

1.2. Using USOF (Universal Service Obligation Fund)

② Direct Benefit transfers : have been a success which:

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2.1 Reduced intermediaries & corruption.

2.2. Made benefits directly available

(3) Gender inclusive :

3.1. PM-JAY : accounts to be opened in female heads name

3.2. Give women financial ownership.

(4) Health :

4.1. Easy vaccination during COVID pandemic using COWIN shows digital success.

(5) Education

5.1 Swayam Prabha Channels → Reach rural students.

5.2. Free NCERT books online ⇒ reduce cost of education

(6) Better accessibility

6.1. GUMANG portal for government schemes details.

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Challenges
- Technical glitches
  Eg: COWIN platform
- Mostly mobile based internet usage
- Rural connectivity ~~not up to the mark~~
- Digital illiteracy → digital divide

As India moves on from 4G to 5G era, cost of digitalization will reduce & bring in better digital governance structures with high speed & low latency.

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Q13. Dairying is a viable livelihood option for a large section of population. In this context, discuss the significance, challenges faced and associated government initiatives for the diary sector in India.

India is the world's largest milk producer & consumer.

Indian farmers depend on this sector to:

→ Insulate them from risk of agriculture failure.
Eg: Drought times

→ Add remuneration → diversifying to dairying

→ Amul: Growth led to increased income to farmers of Kaira district in Gujarat.

→ Value addition in milk like Cheese, curd, Paneer, etc help increase demand & ~~cos~~ price.

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## Challenges :

1. Disease in cattle : Eg. Lumpy skin disease → death of cattle.
2. Poor Quality European breed
   ↳ Indian breed better drought resistant
3. Indian breed not being used because of poor ~~out~~ milk output compared to foreign bovine varieties.
4. Fodder for cattle
   - → Expensive proposition
   - → Eats up plastic → causing death.
   - → No availability of information as to what fodder is best.

## Government initiatives :

1. Rashtriya Gokul Mission to preserve Indian bovine breed.

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(2) Artificial insemination to ensure best variety.

(3) Banks to protect sperms of best variety bulls.

(4) Investment in research on best breed.

This will create an additional source of income to farmers & diversify their risks.

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Q4. The imperative to increase farmers' income must shift to creating value chains and must not be reliant on the MSP regime and subsidy bias prevalent in the current Indian agricultural system.

India's aim to double farmer's income by 2022 is yet to be realized.

This vulnerability of agriculture persists due to huge dependence on MSP & subsidy :

① MSP :

1.1. According to Shanta Ram Committee, only 6% farmers recieve MSP.

1.2. Focus only on Rice & wheat
↳ Reduce soil nutrition
↳ devoid of nitrogen

1.3. Huge fertilizer & pesticides use

1.4. Regional disparities : Mostly Punjab & Haryana farmers recieve MSP benefits.

1.5. Loss → poor warehouse & cold storage facility.

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② Subsidy :

2.1. Fertilizer subsidy → 0.5% of Budget (e survey 2021)
↳ Soil nutrition worsened

2.2. Power subsidy → By states
↳ Excessive exploitation of water
↳ Political reasons to give subsidy

2.3. Benefits recieved by rich farmers who can afford other equipments like tractors & labour.

Need to shift to value chain creation :

Value chains are : value addition in agricultural produce as we move from primary produce to final product.

Important reasons :

① Better remuneration to farmers

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(2) High value products → export demand
Eg: Processed foods have greater demand worldwide

(3) India produces world's second largest horticultural products
↳ huge potential to invest here as less than 2% is currently processed.
↳ Help shift from Rice-wheat system.

(4) Value addition makes demand more elastic as opposed to inelastic demand for primary goods.

Thus, value chains need to be created to make sure farmers recieve better income.

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Q15. What are the challenges in ensuring sustainable river management in urban areas? Highlight the remedial measures that can be taken for river management with a special focus on the recently launched River Cities Alliance.

Sustainable river management refers to using river resources without exploiting its resources beyond its replenishment levels.

Urban areas have grown haphazardly due to which we see many river management challenges like:

1. Flood plain encroachment
   Eg: Hyderabad built on flood plain of Musi river.
2. Illegal river sand mining
   [Eg: Sand mafia in Rajasthan]
   reduces water holding capacity of river → causing floods.
3. Poor cooperation between states
   Eg: Cauvery dispute between

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Tamil Nadu & Karnataka

(4) Overly populated river sides → most vulnerable to flooding.

(5) No coordination on discharge of water from dams
↳ flooding in low lying areas.

Measures needed:

(1) Proper "rule curve" for release of flood water from dams

(2) Investment in an Early warning system
↳ IMD forecasts are not accurate

(3) Interstate coordination is a must

(4) Taking into account climate crisis
↳ Eg: Non-timely rains → cause flooding.
↳ Investing in flood proof housing

(5) Sponge cities experiment of china:

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5.1 Using ~~as absorpa~~ asphalt → better absorbs water than cement.

(6) strict check on flood plain encroachment

(7) Proper drainage system to
- avoid clogging of water
- avoid post flood disease spread → like dengue.

Thus, flood proofing of cities is essential to ensure no lives are lost.

India's focus must be on attaining SDG 11 : Sustainable cities.

River cities Alliance : Cities that fall on same rivers work together in coordinated manner to ensure cooperative river management

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Q16. Haphazard growth and poor management make the Indian cities the locus of disaster, both large and small. Comment. Also, discuss the current gaps in policies in addressing these challenges.

Around 59% of Indian landmass is prone to earthquakes & 60% of cultivable area is prone to droughts.

This shows the vulnerability of Indian geography to disaster. This vulnerability has been increased by

① Haphazard growth:

1.1. Causes congestion in cities
- ↳ Reducing area per person
- ↳ low investment on social welfare per person → poor resources
- ↳ According to UN, 17% of urban population in India → in slums
- ↳ Vulnerable to disease: Eg: Dengue in Delhi

1.2. Poor drainage

↳ Eg: Hyderabad → 100 year old drainage → ~~to~~ more floods (Eg 2020 floods)

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1.3. Encroachment on riverbeds

Eg: Brahmaputra encroachment → floods in Assam

1.4. Poor disaster assement before urbanisation

↳ Landslides in Himachal due to stress of urbanisation on land.

(2) Poor management

2.1. Instant relief difficult in not reachable areas

Eg: Flood affected Kedarnath

2.2. Poor coordination between different arms of state & NGOs causes chaos during relief work.

Gaps in policies

(1) No power to local bodies to take decisions

↳ ~~reduces~~ Increases time taken in response

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(2) Poor investment in disaster resilient infrastructure.

Eg: Delhi → Zone 4 of earthquake → Yet no compulsory earthquake ready ~~prone~~ buildings.

(3) Not-so-stringent regulation

3.1. We still see floodplain encroachment

Eg: Yamuna encroachment in Noida

3.2. Sand mafia in Rajasthan

(4) Poor investment in research in disaster management.

Even R&D is only 0.7% of GDP.

(5) Psychosocial support → not available.

It is estimated that 10% of tsunami hit people (2004) had severe mental health issues

Thus, India needs to strictly adhere to Sendai framework which focuses on Pre & Post disaster phases.

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Q17. Discuss the extent of the problem of narco-terrorism in India. What measures have been taken by the government to counter and control this problem?

Narco-terrorism is the drug trafficking used to spread which is against the

Extent

① India lies between golden crescent & golden triangle

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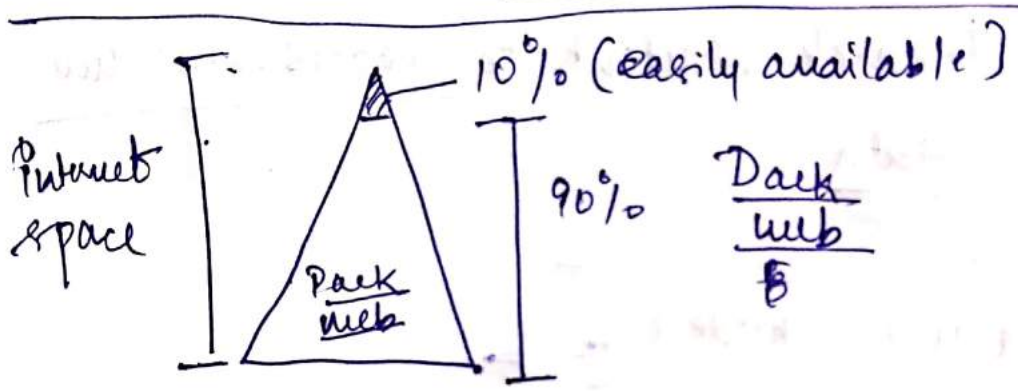
Q18. The dark web can be an ideal platform for sexual criminal and terrorist activities. Discuss with examples. Also, suggest measures to tackle the misuse of dark web.

Dark Web is that part of internet which is not accessible using conventional browsers. Other ones like "TOR" are used.




Platform for criminal act.

1. Use by terrorists to crowdfund money from sympathisers
2. Used as a source of black market activities
   Eg: illegal animal parts sale (Rhino & Elephant teeth)

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(3) Human trafficking

(4) Money laundering

But, alongside it is used by:

(1) Journalists in oppressive regimes

Eg: Journalists in Taliban's Afghanistan

(2) Research students to access sensitive data

Measures needed

(1) International cooperation:

Since dark web does not have any territorial boundaries, an international law needs to be drafted.

(2) Data protection law in India:

to ensure one's privacy (Article 21) is protected

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(3) Better cyber analysts in government
↳ Training in cyber education to police.
↳ Professional cyber experts needed

(4) Cyber security training in schools & offices to protect women & children from harassment.

(5) Better information sharing:
NATGRID is a useful platform in this context.

Thus, dark web needs to be kept in check to avoid any social effects of its use. ⇒ Article 21 → Puttaswamy judgement → Right to privacy of utmost importance.

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Q19. What is catalysis? Highlight the characteristics of catalysts. Also, elaborate why catalytic reactions are important for human beings.

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Q20. Electric mobility offers solutions to the problems associated with climate change, growing fuel prices and urban transportation issues. Discuss in the context of India.

India's Panchamrit goals envision us to be Net zero by 2070. Electric vehicles offer an easy solution to achieve this target.

## Need for Electric Vehicles

① Climate change:

1.1. Rising $CO_2$ emissions due to ~~the~~ petroleum usage → need to shift to lower emission fuels.

1.2. Electric vehicles
- → Zero emissions of greenhouse gas
- → Zero Noise pollution
- → More efficient fuel usage than petroleum

② Growing fuel prices:

2.1. ~~Ex~~ Exhaustible resources like coal, petroleum

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have ever increasing prices → due to constrained supply

2.2. 1973 oil price shock → teaches us how such shocks can cause inflation, & BOP crisis.

2.3. Electric vehicles → do not use oil & thus are not subject to such shocks

2.4 Reduce import burden

(3) Urban transport issues

3.1. High population pressure → need for cheap transport

3.2. Huge congestion due to personal vehicles
↳ electric trains
↳ EV Buses are a solution to ~~deg~~ decongest roads.

## Solution to the problems

EVs offer a cheaper transport with better fuel efficiency

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Need of the Hour

1. Investing more in Lithium & other battery resource exploration.
2. Better relations with Lithium triangle (South America) nations
3. Focus on safety
   ↳ Recent blasts in EV ~~scoo~~ scooters
4. Incentivise EVs
   ↳ Subsidising EV to reduce cost.
   ↳ currently EV cars are expensive

Thus, Electric vehicles offer a solution to climate change, fuel price & urban transport

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